Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A swallowable capsule comprising:

first and second radiation detectors disposed at opposite ends of the capsule;

a pulse shaping device disposed in the capsule and configured to convert an input signal into an output voltage pulse; and

at least one single channel analyzer disposed in the capsule in communication with the pulse shaping device, wherein the at least one single channel analyzer in communication with the pulse shaping device is configured to analyze the output voltage pulse communicated from the pulse shaping device;

and wherein the capsule is operably configured to pass through at least a portion of a patient's gastrointestinal tract.

2. through 4. (canceled)

5. (original) The capsule of Claim 1 comprising a plurality of single channel analyzers.

6. (original) The capsule of Claim 1 comprising a multiple channel analyzer.

7. (original) The capsule of Claim 1 wherein the capsule is coated with a material.

8. (original) The capsule of Claim 1 wherein the capsule is coated with a material for modifying the capsule's transit through the GIT.

9. (original) The capsule of Claim 1 wherein the capsule includes a magnetically-activated switch.

10. (original) The capsule of Claim 1 wherein the capsule includes an angular rate sensor.

11. (currently amended) A system for detecting particular tissues, the system comprising:

a swallowable capsule comprising a detector;

a substance for associating with ~~a particular~~ cancerous tissue, wherein the detector is operable to detect ~~the particular~~ cancerous tissue by detecting the substance associated with ~~the particular~~ cancerous tissue; and

a machine for verifying that at least one of the detector and substance are suitable for use.

12. (currently amended) A method for detecting target cells in a patient, the method comprising:

marking target cells in the patient with a substance capable of being detected;

directing a detector through ~~a naturally occurring body lumen~~ the gastrointestinal tract in the patient to detect signals from the substance;

mathematically transforming data representing at least some of the signals detected into transformed data, wherein the transformed data is indicative of the presence of the substance in the patient; and

determining whether ~~a particular~~ cancerous tissue is present in the gastrointestinal tract of the patient, wherein the act of determining whether ~~a particular~~ cancerous tissue is present in the patient is performed using at least part of the transformed data.

13. (original) The method of Claim 12 comprising the step of verifying at least one of the amount, concentration, and activity of the marking substance.

14. (original) The method of Claim 12 wherein the substance comprises a monoclonal antibody.

15. (original) The method of Claim 12 wherein the substance comprises a peptide.

16. (original) The method of Claim 12 wherein the substance comprises a nanoparticle.

17. (original) The method of Claim 12 wherein the substance comprises a nucleotide sequence such as mRNA or DNA corresponding to a genetic material monoclonal antibody.

18. (original) The method of Claim 12 wherein the substance comprises a liposome or liposome structure.

19. (original) The method of Claim 12 comprising administering multiple radioisotopes to a patient.

20. (original) The method of Claim 12 comprising acquiring energy spectra.

21. (original) The method of Claim 12 comprising fitting particle energy spectra to a model.

22. (original) The method of Claim 12 comprising fitting particle energy spectra to a model of the spectrum of an isotope.

23. (original) The method of Claim 12 comprising comparing received particle energies in different energy bands.

24. (original) The method of Claim 12 comprising employing multiple detectors.

25. (original) The method of Claim 12 comprising combining or comparing the outputs of multiple detectors to provide a spatial response pattern.

26. (original) The method of Claim 12 comprising comparing temporal variation of acquired data with predetermined patterns.

27. (original) The method of Claim 12 comprising employing multiple radiation sources external of a patient.

28. (currently amended) A method for detecting target cells in a patient, the method comprising:

providing a substance having an affinity for a particular target tissue type, wherein the substance is configured to provide a detectable signal;

providing a capsule, wherein the capsule is configured to pass through at least a portion of a patient's gastrointestinal tract, wherein the capsule comprises:

(i) a detector, wherein the detector is operable to detect the signal provided by the substance, and

(ii) a circuit in communication with the detector, wherein the circuit is configured to process output by the detector to provide a data signal indicative of the presence of the substance;

administering the substance to the patient;

administering the capsule to the patient, wherein the capsule is administered orally, wherein the capsule passes through at least a portion of the patient's gastrointestinal tract after the act of administering the capsule to the patient; and

analyzing the data signal to determine whether the particular target tissue type is present in the patient; [[and]]

tracking the position of the capsule along the patient's gastrointestinal tract; and

providing a display, wherein the display indicates the detection of the target tissue type as detected by the detector in relation to the associated position of the detector within the patient's gastrointestinal tract.

29. (previously presented) The method of claim 28, wherein the substance has an affinity for cancerous tissue.

30. (previously presented) The method of claim 28, further comprising administering a probe signal, wherein the substance is configured to provide the detectable signal in response to the probe signal.

31. (canceled)